

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Claims 1-6, 11-17, and 22-29 are pending in this application. Claims 7-10, 18-21, and 30 are canceled by the present response.

Claim 17 was objected to under 37 C.F.R. § 1.75. Claims 25 and 29 were rejected under 35 U.S.C. § 112, second paragraph. Claims 1, 3, 5, 12, 14, and 16 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. patent 5,997,153 to Naoe et al. (herein "Naoe"). Claims 2, 4, 6, 11, 13, 15, 17, and 22 were rejected under 35 U.S.C. § 103(a) as unpatentable over Naoe in view of U.S. patent 4,800,401 to Sato et al. (herein "Sato"). Claims 7, 9, 18, 20, 23-27, and 29-30 were rejected under 35 U.S.C. § 103(a) as unpatentable over Naoe in view of U.S. patent 4,835,786 to Morris et al. (herein "Morris"). Claims 8, 10, 19, and 21 were rejected under 35 U.S.C. § 103(a) as unpatentable over Naoe in view of Sato as applied to claims 2, 4, 13, and 15, and further in view of Morris. Claim 28 was rejected under 35 U.S.C. § 103(a) as unpatentable over Naoe in view of Morris as applied to claim 23, and further in view of U.S. patent 6,641,878 to Suzuki et al. (herein "Suzuki").

Addressing first the objection to claim 17, that objection is traversed by the present response. More particularly, claim 17 is amended by the present response to now depend from claim 11, to not be a duplicate of claim 15.

Addressing now the rejection of claims 25 and 29 under 35 U.S.C. § 112, second paragraph, that rejection is traversed by the present response.

Each of claims 25 and 29 is amended by the present response to more properly be directed to a "method of making an optical scanning apparatus ...". Those claim amendments are believed to address the rejections of claims 25 and 29 under 35 U.S.C. § 112, second paragraph.

Addressing now each of the above-noted prior art rejections, each of those prior art rejections is believed to be overcome by the present response.

Independent claim 1 is amended by the present response to further recite the “holding member including heat radiating fins projecting radially from an outer circumferential portion of said holding member”. The other independent claims are similarly amended. Such features clarified in each of the independent claims were previously recited in dependent claims 7-10, 18-21, and 30. Consequently, those claims are canceled by the present response.

With respect to the above-noted feature the outstanding Office Action cites the teachings in Morris to disclose “a solid-state laser unit comprising a cylindrical housing (10) for fixably holding the laser medium (12) and radial cooling fins (20) provided on the outer circumferential portion of the housing so as to increase the cooling effect (Fig. 2)”.¹

In response to that basis for the outstanding rejection, applicants believe the outstanding Office Action does not fully consider that the teaching of heat fins in Morris is directed to a completely different device than that in Naoe.

More particularly, in Figure 2 Morris discloses providing radial cooling fins 20 that extend outward from a housing 10. However, that housing 10 in Morris is not even similar to the housing in Naoe, as that housing 10 in Morris does not disclose or suggest being formed of a resin having a thermal conductivity equal to or greater than 0.9 w/m°K, as in Naoe.

Applicants also point out that as discussed in the present specification, applicants’ evaluated differences in thermal conductivity in cases in which heat radiating fins were employed and in which heat radiating fins were not employed. As noted in the present specification, in the case of employing an ordinary resin of small thermal conductivity or in the case of employing a metal of large thermal conductivity such as aluminum, the

¹ Office Action of June 7, 2004, page 6, first paragraph.

temperature of a tube on a laser diode is not effected much by the presence or absence of a heat radiating fin.²

The applicants of the claimed invention recognized that, however, when a resin having thermal conductivity such as 1.0 w/m°K is employed the variation of the tube wall temperature depends much more significantly on the presence or absence of a heat radiating fin.³ On the current record only the present applicants recognized such a result.

In such ways, applicants respectfully submit that the use of a heat radiating fin such as in the device of the claimed invention is particularly relevant with the specific type of resin used in the claimed invention, as only recognized by the present applicants.

In such ways, the teachings in Morris of utilizing a heat radiating fin in a housing not formed of a resin such as in the claimed invention is not believed to teach or suggest the claimed features, and is further not believed to be suggested to be combined with the teachings in Naoe.

In such ways, applicants respectfully submit that each of amended independent claims 1, 11, 12, 22, and 23, and the claims dependent therefrom, distinguish over the applied art.

Applicants also note that the primary applied reference to Naoe is not a valid reference in a 35 U.S.C. § 103 rejection as the present application and the patent to Naoe were, at the time the invention the present application was made, commonly owned by Ricoh Company, Ltd.

In such ways, applicants respectfully submit that each of the currently pending claims is allowable over the applied art.

² See for example the present specification at page 10, lines 1-6.

³ See for example the present specification at page 10, line 25 et. seq.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

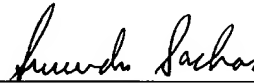
Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413-2220
(OSMMN 08/03)

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Gregory J. Maier
Attorney of Record
Registration No. 25,599
Surinder Sachar
Registration No. 34,423